



UNITED STATES PATENT AND TRADEMARK OFFICE

Eel

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/901,413 | 07/09/2001 | Eyal Krupka | 884.433US1 | 7369 |

7590 06/23/2005

Schwegman, Lundberg, Woessner & Kluth, P.A.
P.O. Box 2938
Minneapolis, MN 55402

EXAMINER

KIM, KEVIN

ART UNIT PAPER NUMBER

2638

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,413

Applicant(s)

KRUPKA, EYAL

Examiner

Kevin Y. Kim

Art Unit

2638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments filed 2-14-2005 have been fully considered but they are not persuasive.

Applicant argues that “a well known full symbol equalizer” can be a starting point for “a reduced complexity equalizer.” However, the purported function of the reduced complexity equalizer is to “identify a subset of symbols from the full symbol alphabet that have a higher probability of being an actual transmitted symbol than the other symbols in the full alphabet.” If fact, this function is performed by the “reduced alphabet determination unit,” referenced by “14” in Fig.1 for example. And yet applicant fails to disclose how this determination is made. Moreover, there is no showing how a full-state equalizer can be made to only check the symbols in the reduced alphabet. It appears that a modification to the structure of the equalizer would be needed to respond to the reduced alphabet provided by the reduced alphabet determination unit. The manner of making the present invention is not sufficiently disclosed so as to allow one skilled in the art make and use the invention without undue experimentation.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

Art Unit: 2638

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites “a reduced alphabet determination unit” and “a reduced alphabet MLSE equalizer.” Claims 15 and 22 recite “determining a reduced alphabet” and “using a reduced alphabet MLSE equalizer.” Claim 25 recites “a reduced state, full-alphabet MLSE equalizer” and “full-state, reduced alphabet MLSE equalizer.” Claim 28 recites “means for determining, . . . , a reduced symbol alphabet” and “a full-state MLSE equalizer.” Identification of “a reduced alphabet” and “a reduced alphabet MLSE equalizer” are thus critical elements of the claimed invention. However, the specification including the drawings merely reiterate the claimed functions of these elements.” Specifically, the drawings show no detailed structures for these elements. Fig. 1, for instance, is a block diagram comprised of blocks with labels written inside pertaining to these elements. The specification also lack descriptions of these blocks. When known elements are employed, a detailed description is not required and a block diagram where each of the known elements may be represented as a block. But with respect to the present application, “reduced complexity equalizer” and “reduced alphabet MSLE equalizers” are not conventionally known equalizers but are described as the present invention. Thus, the specification fails to disclose a “reduced alphabet” equalizer structure that would have allowed one skilled in the art make the present invention. Since the present invention is drawn to a “reduced alphabet” equalizer, at least a distinction from conventional or “non-reduced alphabet” equalizer could have been made to enable one skilled in the art to reconstruct the present invention. Without

Art Unit: 2638

sufficiently disclosed structures, it appears that one skilled in the art would not be able to make the claimed invention without undue experimentation.

The remaining claims are rejected for the same reason as they include the rejected base claims respectively.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Venderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2638

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kvk


CHIEH M. FAN
PRIMARY EXAMINER